

A Joint Newsletter of the New Hampshire Coastal Program and
New Hampshire Estuaries Project

Tidelines

"Periwinkle," Ethan Nadeau

Winter 2002



Office of State Planning

New Hampshire Coastal Program

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Manager's Musings

By Dave Hartman, New Hampshire Coastal Program Manager

Welcome to Jennifer Hunter

The New Hampshire Estuaries Project extends a warm welcome to its new Director, Jennifer Hunter. From a highly competitive set of applicants, Ms. Hunter was selected by the NH Estuaries Project Management Committee to fill the position recently vacated by Cynthia McLaren.

Jennifer's experience while working at the New England Interstate Water Pollution Control Commission (NEIWPCC) used skills very similar to those necessary for directing the maturing NH Estuaries Project. While at NEIWPCC she managed, among other things, a Connecticut River nitrogen reduction project. Jennifer developed contracts, organized meetings and provided technical assistance and support to various regional work groups. Jennifer received her Bachelor of Arts degree from Brown University majoring in biology. She received a Master of Environmental Management degree from Duke University in Resource Economics and Policy.

Thank You to Joanne McLaughlin

In her five plus years with the New Hampshire Coastal Program, Joanne McLaughlin used her skills to conquer

the almost insurmountable Coastal Nonpoint Pollution Control Program. Joanne saw the final approval of our program, which paved the way for implementation funding that, is going toward projects in our coastal watershed communities.

Joanne brought the Coastal Brownfields program to maturity. She worked closely with staff at the Department of Environmental Services to create projects in Durham, Newmarket, Dover and Rochester to help them in their downtown redevelopment efforts. She also put together a grant proposal for a second phase of EPA funding for further Brownfields work which has just begun.

Joanne took a new position as the City of Manchester's recycling coordinator. Her first action will be to develop a pay-as-you-throw program for the City.

Congratulations, Joanne! We'll miss you.

Sally Soule Takes a Sidestep

Sally, as Estuaries Project Assistant, worked with the past Director to implement the newly approved Management Plan. She also assisted in contract administration, and developed outreach initiatives.

When the Coastal Nonpoint position



became available, Sally saw an opportunity to better use her many skills and talents. She's looking forward to walking the streams, keeping an eye out for potential pollution and streambank erosion.

Sally's transfer into the Coastal Program leaves a vacancy at the Estuaries Project. Hopefully, by the next edition of Tidelines, we will be able to report on a full contingent of staff on board.

Coastal Program Boundary Amendment

The Coastal Program is in the process of adjusting its landward boundary, and hold a public hearing on the subject. Intern, Christina Altimari, has diligently worked to understand the

Federal guidance, or lack thereof, and is now putting the finishing touches on the Amendment request.

The Amendment will move the landward boundary so that the entire geography of the 17 coastal communities will be in our "coastal zone." Ever since its inception, the Coastal Program boundary has been a scant thousand feet or less from the highest observable tide, leaving much of the towns' geography lying outside the boundary.

By adjusting the boundary inland, we feel that the benefits accruing to the cities and towns will be greatly enhanced. More projects will be eligible for funding, including many of those freshwater streams and wetlands protection efforts that have to date been outside of the boundary.

Dave Price on Watershed Duty

Dave Price is to be the first watershed-wide seacoast inspector. The Department of Environmental Services created a new seacoast inspector position, utilizing funding from the Coastal Program's recently approved Coastal Nonpoint Pollution Control Program.

Dave's duties will be to the 43 watershed communities from Northwood to the Sea. He will be responsible for enforcement of the State's laws and rules for wetlands protection, shoreland protection and site-specific protection. He will be working under the supervision of Dori Wiggin, DES Wetlands Bureau, in the Pease Office in Portsmouth.

New Hampshire Coastal Program Matching Grants

Notice is hereby given of the availability of 50/50 matching grants. Eligible applicants include the 17 coastal communities, local public schools, institutions of higher learning, county governments, regional planning commissions, state agencies and nonprofit organizations.

Funding is available for planning, management, and education proj-

ects as well as acquisition and construction projects. Maximum grant awards are \$50,000 and only one application may be submitted per applicant. Projects selected for funding may start no earlier than July 1, 2003 and must be completed by June 30, 2004.

Application Deadline:
Tuesday, January 21, 2003

For further information or to obtain a copy of the application, please contact **David Murphy at the NH Coastal Program office (431-9366)**, or visit our web site:

<http://www.state.nh.us/coastal>



Expanding the Coastal Boundary

By Christina Altimari, Intern

This past summer, the Office of State Planning began working on a proposal to amend the inland boundary of the New Hampshire Coastal Program. Currently, the coastal boundary averages a 1,000-ft. setback from the mean high tide line of coastal waters. Upon federal approval, the amended inland boundary will expand the Coastal Program to the full jurisdictional boundary of New Hampshire's seventeen coastal municipalities (Dover, Durham, Exeter, Greenland, Hampton, Hampton Falls, Madbury, New Castle, Newfields, Newington, Newmarket, North Hampton, Portsmouth, Rollinsford, Rye, Seabrook, and Stratham).

The Coastal Program is based on

preexisting laws and statutes applicable throughout the state. Regulation and enforcement of the Coastal Program will not change, because the boundary realignment will not require the addition of any new laws or permits. However, the boundary change will provide the state, along with the coastal municipalities, the opportunity to identify areas for the protection of natural, historic, and cultural resources. Federal grant money will be available through the Coastal Program's competitive grant system to the limits of the 17 municipal borders, to fund projects that focus on coastal protection, education, and management.

Each of the involved municipalities and state and federal agencies

have been informed of the proposed boundary change. The response from municipalities and others has been highly favorable. A public hearing to discuss the boundary change is scheduled in December, and the Coastal Program plans on submitting the proposed boundary change as a program amendment to the National Oceanic and Atmospheric Administration, for its approval in February 2003.



Gulf of Maine Council Hard at Work on Action Plan

Kent Curtis, Outreach & Education Coordinator of the Gulf of Maine Council on the Marine Environment

The Gulf of Maine Council on the Marine environment has been busy initiating its Action Plan priorities for the Gulf of Maine.

Last year, the Council drafted its

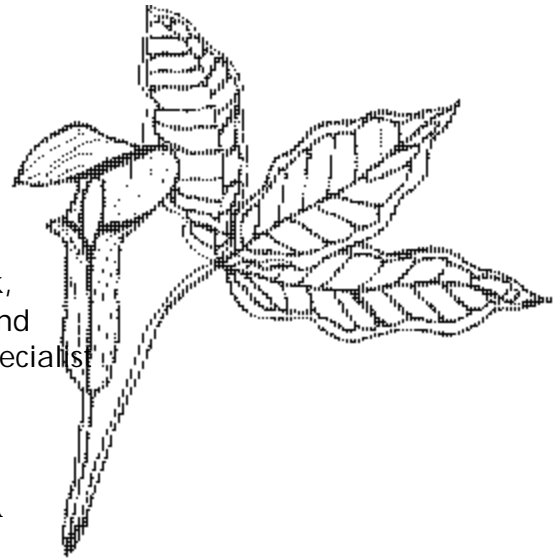
second consecutive five-year action plan, identifying three major goals for the Gulf in 2001-2006, and numerous strategies to fulfill those goals. This year the plan got underway.

The Council has been creating and fulfilling Action Plans since its creation in 1989. Like the current Plan, past plans have been ambitious lists of goals and actions created to guide the activities of the Council and encourage



Coastal Wetland Mitigation Inventory Underway

By Jen Drociak,
Coastal Wetland
Restoration Specialist



West Environmental, Inc. has recently been contracted to identify freshwater wetland mitigation, restoration and preservation opportunities in 19 coastal/estuarine communities. This project has two parts. The first part involves the inventory of preservation, restoration, and creation opportunities. A list will be created of approximately 6-10 opportunity sites (for each of the 19 coastal communities) in the following categories: preservation of wetland buffers, restoration of degraded wetlands, and creation/mitigation opportunities. A description of each site will include its location (put onto a GIS), environmental benefits of a potential project, scope of the work needed for a potential project, and the approximate size of the site. The methodology and criteria identifying

the sites within each category has been developed with the assistance of an advisory committee. A tentative list of the criteria will include:

- Preservation of wetland buffers: This includes buffers around prime wetlands, areas with rare or endangered species, important wildlife areas, large wetland systems, multi-town wetland complexes, and proximity to other conservation areas.
- Restoration of degraded wetlands: Including flood-prone areas, severely degraded wetlands, and fill storage areas.
- Creation/Mitigation Opportunities: Including old gravel pits, opportunities for stormwater

cleanup, and wildlife refuge.

The second part involves outreach to the communities. At regional or town-specific meetings, West Environmental will discuss the inventory, advise communities on how to best use the inventory, identify funding opportunities for proactive projects, and introduce the model ordinance and state mitigation rules. Together with the list of restoration and protection opportunities, towns will have a comprehensive set of tools for better wetland protection.

partnerships and collaborations throughout the region. Past Action Plans have led to the creation of Gulf of Maine watershed maps, the Gulfwatch water monitoring program, data and information sharing programs, and the reduction of marine debris.

The current plan focuses on habitat, contaminants monitoring, and sustainable development. (www.gulfofmaine.org/action_plan2001-06.pdf) Among the proj-

ects now underway are two major web-related initiatives.

The first is the creation of a habitat protection and restoration site linked to the Gulf of Maine Council's web site. This site will include up to date habitat data, regional links, and interactive maps. The first Phase of the site will come on line next spring.

The other initiative is a revision of the existing Gulf of Maine

Council site. With changes in Web technology and a large number of Action Plan priorities with Web-related content as their outcome, the Council decided to use some of its existing Web budget to undertake a full review of the existing site, reorganize its navigation hierarchy, and launch a new platform to present its 2001-2006 Action Plan priorities. The new site is expected next spring as well.



President Bush Joins New Hampshire Politicians in Their Praise for Corporate Wetland Restoration Partnerships

Corporations Jacques Whitford and Northeast Utilities Lead Effort

At the November 18th Corporate Wetland Restoration Partnership (CWRP) kick-off event, United States President George W. Bush sent a letter of congratulations to all parties involved in the Little River Salt Marsh restoration project. Henry Mixter, North Hampton's Conservation Commissioner, accepted a Coastal America award on behalf of the partnership. The Partnership joined efforts of Federal, State, and local governments, nongovernmental organizations, and the private sector to restore tidal flushing to 170 acres of degraded salt marsh.

Wetland restoration partnerships between the public and private sectors will become more common in New Hampshire with the launch of the CWRP, a new program that is good for businesses and the environment. At the event, U.S. Congressman Sununu, U.S. Senator Judd Gregg and U.S. Senator Smith recognized Northeast Utilities and Jacques Whitford, Inc. as leading the New Hampshire state effort of business participation in the CWRP.

CWRP's goal is to facilitate corporate interest, involvement, and

support for the state's aquatic resources. This goal includes raising corporate in-kind services and dollars to leverage federal matching funds. These funds are used to restore coastal and freshwater wetlands and rivers degraded by human activities such as fill, pollution, or changes in water flow. The federal government has adopted the program as a national initiative. New Hampshire is the 5th New England state, including Maine and Massachusetts, to join the partnership.

In New Hampshire, the program will help fund habitat restoration projects, specifically targeting priority projects developed by the state. Examples of projects include: the restoration of coastal wetlands, fish passage over dams and re-establishment of eelgrass beds.

"The New Hampshire CWRP is a unique opportunity for corporations and environmental professionals to collaborate with regulators and state agencies to have a powerful impact on New Hampshire's environment. Similar partnerships in neighboring states have resulted in substantial progress in restoring at-risk and damaged wetland areas.

Truly a win-win for industry and government alike."- Paul Ladd, Vice President at the Jacques Whitford Company, Inc., a founding member of the partnership in New Hampshire.

Similar to the Little River salt marsh partnership that was completed before the CWRP was in existence, partnerships in the future will involve individuals who are dedicated to New Hampshire's coastal environment. Leaders like Paul Ladd, Vice President at Jacques Whitford Company, Inc and John MacDonald, Vice President of Operations at PSNH understand that by fostering good working relationships between business and government, there will be funding for the partners involved, and a bill of good health for New Hampshire wetlands.



Great Bay National Estuarine Research Reserve Coastal Training Program

By Steve J. Miller, Coastal Training Program Coordinator

Have you ever disagreed with a Board of Adjustment, Conservation Commission, or Planning Board ruling, or with your City Council or Selectmen as they moved forward the business of the town? Of course we all have at some point, but have you ever put yourself in the shoes of the people who sit on these boards? Who are these critical decision makers? What is their training and background?

The members of these and other town boards, councils, and committees are our neighbors who represent us in our local government. They are the decision makers, guided by our community policies, who grapple with the difficult and complex issues of city life today: economic growth, budgets, environmental health and sustainability, quality of life, infrastructure, police, fire, and schools.

How are these decision makers trained to deal with these complex and intertwined issues? They come to the table with their life experiences, but they learn on the "job," and training may only be a handbook with the guiding policies of the individual board. And although today's life experiences are rich and varied, they may not prepare us to deal with issues outside our individual field. This incongruity is at the heart of the National Estuarine Research Reserve Coastal Training Program, the mission of which is to be a

leader in developing and implementing a comprehensive plan for educating Coastal Decision Makers about issues that affect the sustainability of our region's estuaries. To accomplish this mission the position of Coastal Training Program Coordinator has been implemented at Great Bay National Estuarine Research Reserve (GBNERR).

The goal of the Coastal Training Program (CTP) is to improve decision making related to coastal resource management at local and regional levels.

The goal of the Coastal Training Program (CTP) is to improve decision making related to coastal resource management at local and regional levels. The objectives of the CTP are to:

- Provide the best available science-based information, tools, and techniques to those individuals and groups that are making important decisions regarding resources within coastal watershed, estuaries, and nearshore waters;

- Increase networking and collaboration across sectors and disciplines related to coastal management issues in local and biogeographic areas; and
- Increase understanding of human activity within the coastal landscape.

These are challenging objectives and who better to tackle them than GBNERR working with great partners throughout the seacoast. The work is critical, the time is now, and I encourage you to make your shoes, the shoes of a coastal decision maker.



Coastal Clean-up Brings Out Schools, Families, Divers and Political Candidates

By Verna DeLauer

How much marine debris can four political candidates pick up in one hour?

Governor Jeanne Shaheen, U.S. Congressman John Sununu, Gubernatorial candidates Mark Fernald and Craig Benson joined volunteers at the Seacoast Science Center to kick off the 15th annual Coastal Clean-up.

Governor Shaheen read a proclamation that stressed the importance of protecting New Hampshire's coastal resources.

United States Congressman Sununu (candidate for U.S. Senate) dragged lobster traps up from the rocky shore in an effort to help out a Boy Scout troop.

Gubernatorial candidates Mark Fernald, Craig Benson and their supporters engaged in a friendly contest to determine who could

pick up the most marine debris by pound.

Jeffrey Taylor, Director of the Office of State Planning and Wendy Lull, President of Seacoast Science Center also made opening remarks about the success of past clean-ups and the unending dedication of New Hampshire volunteers.

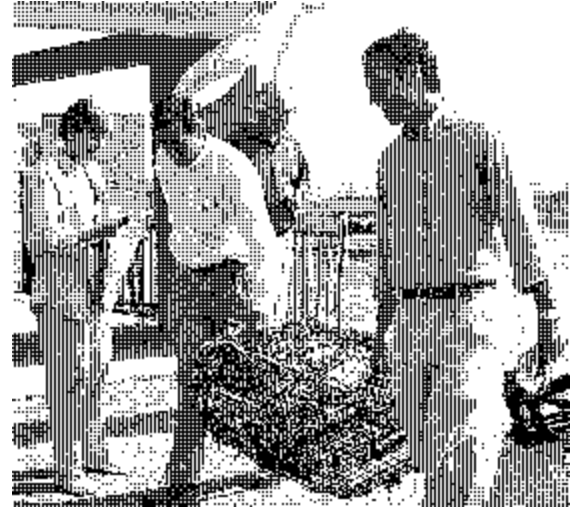
In the end, though, it was the 1,300 volunteers that picked up the most--8,000 pounds from 24 sites along New Hampshire beaches and waterways. This included an underwater cleanup at Gosport Harbor by the United Divers Association of America.

The Clean-up, coordinated by the New Hampshire Coastal Program, in conjunction with the Ocean Conservancy and Waste Management of New Hampshire, took place on September 20 & 21, 2002.

For more information about the cleanup, go to www.state.nh.us/coastal or contact Verna DeLauer, 603-271-2155.

The History of the Clean-up

The New Hampshire Coastal Clean-up is part of a larger effort coordinated by the Ocean Conservancy. One hundred and eighteen countries participate in the



Governor Shaheen, Craig Benson and Jeff Taylor, OSP Director, kick off the clean-up

International Clean-up. Volunteers collect data and the Ocean Conservancy compiles it in a global database to monitor trends and types of debris over the years. On the data card, debris items are grouped by their source. For instance, oceans and waterways are one source of debris and smoking related activities are another. With this information, the Ocean Conservancy determines where educational efforts are needed.

Why Clean the Beaches?

Clean-up efforts decrease the number of birds and mammals that die each year due to ingestion or entanglement related to marine debris. It also decreases the



Congressman Sununu returns from the beach



chances of the number of human related accidents due to sharp glass, syringes, or fishing line.

Marine debris includes anything that does not occur naturally in the environment. Some of this debris comes from ocean-based sources such as boats, but primarily it comes from land-based sources such as beachgoers, inappropriate dumping and general littering. Simply stated, the source of debris is human activity.

Pushed by wind and pulled by water, trash travels. River and stream water passes through 43 New Hampshire towns before arriving at the coast. Residents of inland communities might not think of themselves as having much effect on the coast, but clean-up volunteers may pick up litter that has washed downstream from as far away as Wakefield, New Durham, Northwood or Candia.

How do we prepare for the Clean-up?

1. We hold a Coastal Clean-up Art Contest for students. This year we received 200 submissions. The seven winners' pictures were used on the Coastal clean-up poster and in the brochure. Winners included: Brynn Potter, Jenna Nugent, Amanda Pelletier, and Courtney Glynn from North Hampton Academy, Maria Chavez from Horne Street School, Kyle Spencer

from Maple Avenue School, and Megan Shannon from Barrington Middle School.

2. We present outreach programs about marine debris. Over 50 schools and libraries were reached throughout the year. To sign up for a Beach Buddies presentation, contact Verna DeLauer 271-2155.

3. We participate in the National Marine Debris Monitoring Program, also coordinated by the Ocean Conservancy. This monthly monitoring program targets 30 specific debris items on randomly selected 500-meter (1/3 mile) study sites. The EPA, National Marine Fisheries Service, National Park Service, and the U.S. Coast Guard will use the data to gain a better understanding of the nature of marine debris and assess the effectiveness of current marine debris legislation.

4. We fund marine debris outreach projects. Through a Coastal Program grant, NH Fish and Game Department is doing a series of articles in its magazine and a series of documentaries on Public Television about coastal issues. One segment is on marine debris. For copies of their article, contact

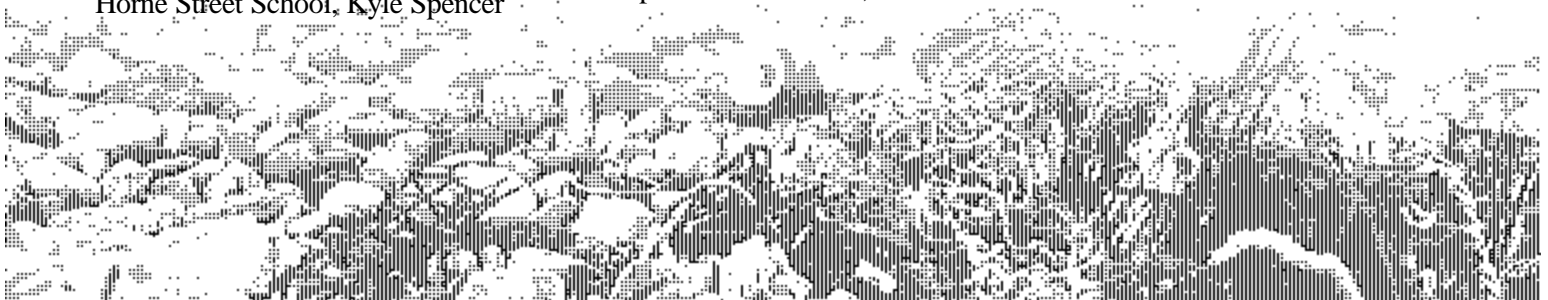
Verna DeLauer at 271-2155. The Television segment will air in March on the new show Wildlife Journal.

5. We set aside one day of the annual clean-up specifically for school participation. This year over



500 students participated.

Approximately 100 of the students from Sacred Heart School in Hampton biked from their school to the beach in support of the event. Other participating schools included: New Franklin School, North Hampton Junior High, Dondero Elementary, Newfields Elementary, Barrington Middle School, and the Marston School.





New Scientific "Help Center" for Coastal Decision-Makers

By Peter H. Taylor, Science Translator
Gulf of Maine Council on the Marine Environment

Imagine this: you are a coastal manager, planner, or policy-maker in New Hampshire, Massachusetts, Maine, Nova Scotia or New Brunswick. You need the latest scientific insights on an issue related to habitat or contaminants in the Gulf of Maine, either for an immediate decision or long-range planning. Where do you turn to find this valuable information? Given unlimited time and resources, you could gather journal articles and track down experts for discussions. Even then, you might find the materials incomprehensible, not relevant to the Gulf of Maine, or difficult to synthesize in a useful way. Quite commonly these challenges inhibit coastal decision-makers from using complete, current, and accurate scientific information that could aid environmental planning, regulation, and management.

The Science Translation Project is a new initiative of the Gulf of Maine Council on the Marine Environment that tries to help bridge the gap between scientific understanding and coastal resource management. The Council recently hired two science translators, Ethan Nedeau and myself, who will assist coastal managers and decision-makers throughout the Gulf of Maine region by assimilating scientific information into useful and digestible formats. The Science Translation Project is novel because unlike many outreach programs, our target audience is not the pub-

lic. Instead, we are providing an information service—a scientific "help center"—specifically for environmental professionals. Our mission is to facilitate science-based management in the Gulf of Maine and to help government and non-government organizations use science translation as an essential conservation and management tool.

Both Ethan and I have graduate degrees in environmental sciences and backgrounds in communications that give us the skills to gather, review, and communicate scientific information. Ethan is focusing on contaminant issues, especially sewage, nitrogen, and mercury. I am working on habitat and aquatic nuisance species issues, as well as co-managing the redesign of the Council's Web site as a resource for managers.

Our work is designed to meet the information needs identified by our target audience. We are currently assessing and prioritizing these needs by holding focus groups that are attended by managers and planners throughout the Gulf of Maine region. Once key issues are identified, we will develop publications, online resources, and workshops. We are prepared to take on a range of short- or long-term projects. For example, we could do anything from produce a one-page fact sheet and map of habitat impacts in the Gulf of Maine to compile a comprehensive synthesis of scientific

information on sewage treatment options and strategies for the region. We are actively seeking ideas and requests for potential projects from members of our target audience-like you.

Have suggestions or needs? What information gaps do you see? What can we do to help fill them for you and your colleagues? We encourage you to tell us. Please feel free to contact us at any time—and rely on us in the future for providing the scientific information you need.

Contact the Science Translation Team

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NH Estuaries Project News

152 Court Street, Portsmouth, NH | www.state.nh.us/nhep
Jennifer Hunter, Director

Protecting Wildlife and Significant Habitat in Coastal New Hampshire

Mark Zankel, Director of Conservation Programs, The Nature Conservancy of New Hampshire

The Great Bay Estuary transforms New Hampshire's 18-mile coastal shoreline into 150 miles of rich salt and freshwater estuarine diversity, encompassing a 200-square mile, 17-town region. The Great Bay region is a mosaic of high quality, highly productive freshwater and tidal wetlands - thousands of acres of salt marshes, tidal rivers, eelgrass beds, mudflats, beaver flowages, emergent marshes, fens, bogs, Atlantic white cedar swamps, and floodplain forests - bordered and linked by a range of upland forest types. A few statistics highlight the tremendous and irreplaceable biodiversity known to rely on the region:

- 155 species of rare plants, 18 species of rare animals, and 35 types of rare natural communities.
- One of the most important wintering ground and migration stopover sites on the eastern seaboard for 20 species of waterfowl, 27 species of shorebirds, 13 species of wading birds, and Bald Eagles

It's no wonder that Great Bay is often referred to as "the unknown treasure of the New Hampshire Seacoast!" This treasure, however, is under threat due to rapid devel-

The project included intensive field inventory for rare plants, wildlife, and exemplary natural communities, and GIS modeling to predict the location of significant wildlife habitats.

opment, fragmentation, invasive species, and water quality degradation.

The Great Bay Resource Protection Partnership ("Partnership") was formed to respond to growing pressure on the region's precious natural resources by identifying and protecting vital habitat conservation areas before they are lost forever. Founded in 1995, the Partnership is

a public-private collaboration consisting of non-profit conservation organizations, state and federal agencies, and local municipalities.

The Partnership has successfully protected more than 2,000 acres of ecologically sensitive lands located in the communities of Durham, Newmarket, Stratham, Greenland, Newington, Portsmouth, Exeter, Newfields, and Dover. In addition, Partnership organizations have individually protected an additional 1,500 acres of critical habitat.

With the support of the New Hampshire Estuaries Project, the Partnership has recently undertaken an initiative to identify and prioritize significant habitat in the Piscassic and lower Lamprey River watersheds. The project included intensive field inventory for rare plants, wildlife, and exemplary natural communities, and GIS modeling to predict the location of significant wildlife habitats. The purposes behind the effort were straightforward:

- To help direct the conservation activities of the



Partnership and local partners in the Piscassic and lower Lamprey watersheds by providing on-the-ground data on the occurrences of significant biological and ecological resources, and by creating GIS modeling applications that identify potentially significant wildlife habitat across multiple watersheds.

- *To provide science-based data that will strengthen the Partnership's land conservation grant funding proposals.*

First, the Partnership conducted a targeted field inventory to identify significant habitat for wildlife, plants, and natural communities of concern in the Great Bay region, with a focus on the Piscassic River watershed. The Piscassic supports significant waterfowl concentrations and wetland resources, and is highly threatened by development and fragmentation. With permission from numerous private landowners, Nature Conservancy ecologists worked closely with NH Fish and Game Department wildlife biologists to survey some 2,500 acres deemed to have high potential for supporting important habitat.

In the case of the Piscassic, we can conclude that the watershed is meeting its potential - the area contains a rich diversity of significant habitat. Our field surveys documented nearly 360 plant species, or 18% of all known plant species in

the state, and located several rare plants such as the Giant Bur-Reed. Seventy species of wildlife were documented, including species of concern such as nesting Black Ducks, Blue-Winged Warblers, and Jefferson/Blue Spotted Salamanders. The scientists also found eight rare habitats, including Blackgum-Red Maple swamp. The ecologists were impressed by the relative lack of weedy species, indicating a high degree of ecological integrity. Surveyed areas contained a productive mosaic of early successional habitats such as open field and beaver-influenced ponds and wetlands interspersed with intact river corridor, forested uplands, and wetlands. All in all, the study identifies, documents, and recommends that the Partnership initiate land conservation activities on approximately 1,100 acres of important habitat.

The second element of the project was to develop predictive GIS models and to map potentially significant wildlife habitat for the ecologically linked landscape of the Piscassic and lower Lamprey River basins. Dan Sundquist, GIS guru for the Society for the Protection of New Hampshire Forests, convened a working group of regional experts to carefully construct, evaluate, and revise a series of models addressing both broad wildlife habitat classes (or "coarse filters") as well as the individual habitat needs of 25 animal species of conservation concern. In addition to creating high value habitat maps for each species

and for areas where multiple habitat features intersect, Dan developed an innovative new approach to rapidly delineate open or early successional lands, which provide vital habitat in the Great Bay region for many declining species. Final maps will be made available to members of the Partnership and other local partners to help guide further conservation activities. The methodology for creating the significant wildlife habitat models has been documented and will be made available to other GIS users who wish to conduct similar analyses in other watersheds.

The Partnership is already putting the results of the NHEP-funded study to good use! The Nature Conservancy is contacting owners of priority lands identified during the project to explore protection opportunities. In addition, the Partnership submitted a grant proposal for \$1 million to the North American Wetlands Conservation Council to fund protection of priority parcels identified during this study. The Partnership is grateful to the NHEP for supporting the initiative to identify, document, and map significant habitat areas in the Piscassic and lower Lamprey River watersheds, and is confident that the results will help to protect open space, habitat, recreation opportunities, and water quality in the Great Bay estuary region.



"Be Part of the Solution" Campaign

The New Hampshire Estuaries Project recently launched its new PR campaign. The campaign aims to increase awareness of the coastal watershed, and provides specific actions people can take to be good stewards of New Hampshire's estuaries. Such actions will help ensure that New Hampshire's estuaries will always be important environmental, economic, and cultural resources.

The campaign identified 6 actions to keep estuaries healthy:

- (1) Maintaining septic systems with annual inspections
- (2) Pumping boat waste legally using a pump-out service
- (3) Scooping and properly disposing of pet waste
- (4) Using environmentally safe practices and products on yards
- (5) Never pouring anything down storm drains
- (6) Supporting open space protection in towns

The campaign involved posters, window clings, brochures, radio public service announcements (PSAs) featuring our "spokes-clam" Clem, press coverage, and support for project partners' Estuaries Month activities (see related story).

The large color poster, which has been extremely popular, effectively depicts the connection of the region through its water resources. The residents of the 42 communities represented in the coastal watershed can view the prominent water resources in their area and better understand their relationship to the entire watershed. The poster also has images that connect people to the estuaries, and lists the six actions people can take to be part of the solution. Posters are free to coastal watershed residents and businesses for a limited time and are available from the NHEP office.

The 60-second radio PSA featured Clem, a self-described, "saltwater-spitting, mud-loving bivalve," speaking on behalf of the NHEP to remind people of the six things they can do to protect NH's estuaries. The radio PSA was played over 1,000 times on five different radio stations through the Clear Channel network.

Estuaries Month Events

Similar to 2001, the NHEP celebrated National Estuaries Day (October 5, 2002) with its own designation of Estuaries Month, during which time it supported a number of activities throughout coastal watershed communities. After receiving 23 proposals for events, NHEP awarded twenty \$200 grants to various groups in the watershed. Their charge was to hold an event that aimed to get community members and students involved in preserving, protecting, and learning about our state's beautiful and environmentally important estuaries. Events consisted of nature walks, smart growth meetings, kayak and boat trips, land protection workshops, river/beach clean-ups, and many others.

Because timing coincided with the inception of NHEP's new PR campaign, Estuaries Month partners and their events benefited from the additional publicity. All groups were given NHEP's watershed posters, as well as smaller-sized matching posters to advertise Estuaries Month and their specific events.

Thank you to all who participated in planning and celebrating Estuaries Month. Be sure to look for Estuaries Month activities in 2003.

NHEP Makeover

This December, the NHEP is launching a new and improved web site at www.state.nh.us/nhep. The site is more user-friendly and full of useful information. It includes estuary-related information and events, downloadable reports (including the NHEP Management Plan), funding opportunities through NHEP, environmental monitoring data, and much more. Check it out!





New Hampshire Estuaries Project Shellfish Indicators

During the past year, NHEP's Technical Advisory Committee (TAC) has developed a set of environmental indicators as part of the NHEP Monitoring Plan, published in May 2002. These indicators are to be used as criteria or an evaluation tool, for tracking progress toward the goals described in NHEP's Management Plan. The first of three indicator reports to be completed in this next year was a report on shellfish indicators in New Hampshire's estuaries. Subsequently, there will be reports on water quality indicators and land use/habitat indicators that will ultimately generate a State of the Estuaries Report in 2003.

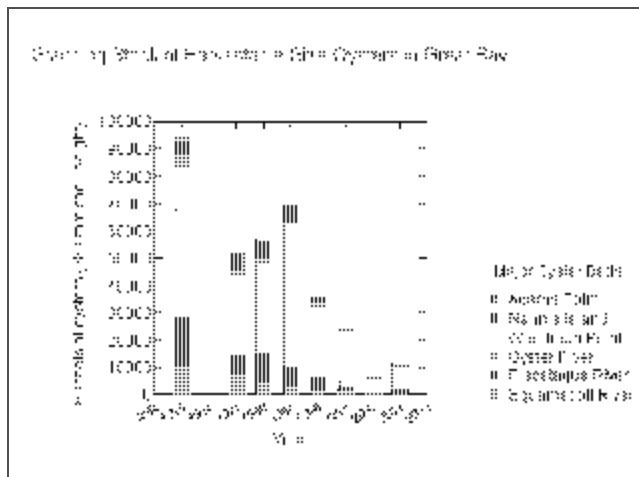
NHEP's coastal scientist, Phil Trowbridge, analyzes data from the federal, state, and university monitoring programs that are relevant to the NHEP indicators. The status and trends of the indicators are then presented to NHEP's TAC, the NHEP Management Committee, and the public, to illustrate whether the NHEP is succeeding relative to its

stated goals.

The Environmental Indicators Report for Shellfish, completed September 27, 2002, presents information on 12 shellfish indicators. Two shellfish indicators were the Standing Stock of Oysters in Great Bay and the Standing Stock of Clams in Hampton Harbor. The standing stock is the number of oysters or clams that are available for harvesting each year. This number is calculated through measurements of oyster or clam density and the area that they cover at each location.

Data courtesy of NH Fish and Game Department and Dr. Rich Langan, University of New Hampshire

The goal as listed in the NHEP Management Plan is to maintain the oyster standing stock at the 1997 level of 68,000 bushels. The oyster fishery in the Great Bay, as shown in this graph, has experienced a severe decline since then, now reaching only 16% of the stated goal. As a numerical example, if this were an actual commercial fishery, its value would have dropped from over \$8 million to \$1 million. (Note:

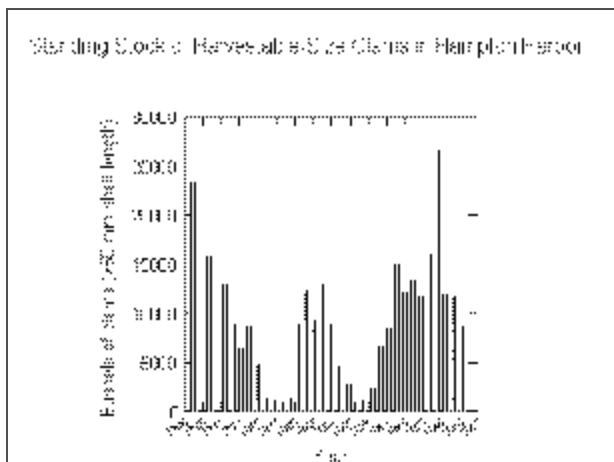


This cost estimate is hypothetical, since there is no commercial oyster harvesting in NH.)

This decline is thought to be attributed to protozoan pathogens MSX and Dermo, which have caused similar declines in oyster fisheries in the Chesapeake and other mid-Atlantic estuaries. Most of the remaining standing stock is located in Adam's Point, Nannie Island, and Woodman Point beds. These beds are located in waters that are approved for shellfishing.

Data courtesy of Seabrook Station

Clam standing stock has undergone several cycles of growth and decline over the past 30 years. Before 1989, clam harvests by recreational clambers were high which contributed to the crashes of the fisheries in the late 1970s and 1980s. From 1989 to 1994, the clam flats in Hampton Harbor were closed due to elevated





bacteria concentrations in the water, during which time the clam population rebounded to unprecedented levels. Since 1994, harvests have remained low, but the clam populations have recently begun to decline again.

The NHEP is researching the cause of this decline. Strong factors that have been observed are the predation of young clams by the invasive green crab and also emigration of young clams due to the strong tidal current

that exists in Hampton-Seabrook Harbor. Green crab populations in Hampton Harbor have nearly tripled over the past 20 years due, in part, to increasing ocean water temperatures during the winter.

During the summer season, when wholesale prices are approximately \$250/bushel, the value of the fishery has been as high as \$6.6 million. The 2000 value was approximately \$2.2 million. (Note: This cost estimate is hypothetical because there is no com-

mercial clam harvesting in New Hampshire.)

The NHEP Monitoring Plan and the Environmental Indicators Report for Shellfish will be available on the NHEP website, www.state.nh.us/nhep, in December. For questions on NHEP's monitoring program, contact Phil Trowbridge at 271-8872 or ptrowbridge@des.state.nh.us.

Septic System Outreach

By Rachel French, NHEP Planning Technician

As the coastal New Hampshire population continues to grow, drinking water sources are limited and the need to protect them is greater. Improperly functioning and overloaded septic systems are sources of water pollution. Failing septic systems leak harmful pollutants, like bacteria and excess nutrients into groundwater. From there, pollutants make their way into our lakes, streams, and estuaries. Pollutants from failing septic systems can contaminate drinking water, close shellfish beds and swimming areas, and harm aquatic life.

Recognizing the potential threat to estuaries, NHEP has implemented a number of activities to provide information on proper septic system maintenance directly to shoreline property owners, and other citizens in the coastal watershed. NHEP has partnered with Granite

State Designers and Installers (GSDI) to provide practical workshops for septic system owners.

For the past two years, GSDI, through a grant from NHEP, has conducted free public information workshops in coastal New Hampshire. The workshops were designed to educate and inform residents about septic system function, proper maintenance, dos and don'ts of system care, and the application of alternative leaching products. In addition, workshops provided residents the opportunity to get their specific questions answered by experts and provided take home materials for reference. Due to a large and favorable response to three workshops in 2001, NHEP supported six additional GSDI workshops this past summer. Over 300 septic-system owners have attended the workshops.

In conjunction with GSDI, NHEP is printing additional septic file folders for owners to promote better septic understanding, maintenance, and record keeping for homeowners. NHEP is also producing magnets that can be used to remind septic system owners of upcoming service dates. These items will be direct mailed to our targeted audience and will also be distributed through building inspectors, town halls, and realtors this winter. Septic system maintenance (annual inspections and frequent pump-outs) is encouraged as part of NHEP's "Be Part of the Solution" campaign.

For more information on NHEP's septic system outreach activities, contact Mary Power at 433-7187 or Mary.Power@rscs.net.

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